L 41338-65   EWA(k)/FBD/EWG(r)/EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/EWP(l)/EEC(t)/T/
EWP(b) EWA(m) 2/EWA(h)   Pm-4/Pn-4/Ps-4/Pf-4/Psb/P1-4/P1-4   SCTB/IJP(o)
ACCESSION NR: AP5010389   WH,WH   UR/0368/65/002/003/0232/0242

57
67
AUTHOR: Samson, A. M.   B

TITLE: Calculation of luminescence of finite volumes with level population inversion

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 3, 1965, 232-242

TOPIC TAGS: ruby laser, laser action, luminescence, population inversion,
Q spoiled laser, laser

ABSTRACT: The luminescence induced in large laser ruby rods by a high inverted
level population can become comparable with the generated emission density, espe-
cially in pulsed Q-switched lasers, and can therefore greatly reduce the laser ef-
ficiency. To estimate this effect, the author calculates the luminescence proper-
ties of a ruby rod with negative absorption coefficient as functions of the volume
and of the pump intensity. The calculations are based on a simplification of the
nonlinear transport equations, with allowance made for the fact that the radiation
is propagated predominantly in the axial direction. The system of equations for
the light field inside the rod is solved rigorously to obtain the longitudinal dis-

Card 1/2

L 44338-65
ACCESSION NR: AP5010389

tribution of the luminescence in the rod and to estimate the average density of
the intensified luminescence. An approximate solution which facilitates the com-
putations is also obtained by assuming the absorption and transmission coefficients
to be constant along the rod. It is shown that in a ruby rod the probabilities of
transitions induced by the luminescence are of the same order of magnitude as
the probability of induced emission. The calculations are made both for the mode
in which the particles accumulate at the metastable level and for the lasing mode.
Estimates of the intensified luminescence in the presence of stimulated emission
are made for ruby cylinders with absolutely transmitting and polished side sur-
faces and for a sphere with no reflecting side surface. The estimates show that
allowance for reflection from the side surfaces leads to appreciably larger values
of intensified luminescence, by as much as a factor of 10 in some cases. "I am
grateful to B. I. Stepanov for interest in the work and for valuable advice."
Orig. art. has: 3 figures, 27 formulas, and 3 tables.   [02]

ASSOCIATION: none

SUBMITTED: 02Sep64   ENCL: 00   SUB CODE: EC, OP

NO REF SOV: 005   OTHER: 000   ATD PRESS: 3241

Card 2/2

EWA(k)/FBD/EWG(r)/EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/EWP(l)/T/
EWP(k)/EWA(m)-2/EWA(h)   Pm-4/Pn-4/Po-4/Pf-4/Peb/Pl-4/Pl-4
ACCESSION NR: AP5013855 TB/ICP   WG/WI   UR/0363/65/002/004/0299/0306

AUTHOR: Samson, A. M.

TITLE: Calculation of nonstationary luminescence of media with inverse energy level populations

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 4, 1965, 299-306

TOPIC TAGS: laser, level population, population inversion, ruby rod, luminescence, absorption coefficient, three level laser, stimulated emission

ABSTRACT: The author investigates the nonstationary luminescence of volumes of finite dimensions containing a medium with negative absorption coefficient. The purpose of the investigation is to ascertain the time dependence of the main luminescence characteristics, in view of the fact that in most cases the population inversion can be produced only within a very short time interval. This time dependence is calculated in the presence and in the absence of stimulated transitions. The calculations are based on the probability method, using as an example a medium with three energy levels. The results are therefore applicable to a ruby rod. Allowance is made in the calculations for the waveform of the applied pumping pulse. Orig. art. has: 5 figures and 15 formulas.   [02]

Card 1/2

L 5382 -65
ACCESSION NR: AP5013855

ASSOCIATION; none

SUBMITTED: 02Sep64   ENCL: 00   SUB CODE: OP, EC

NO REF SOV: 005   OTHER: 000   ATD PRESS: 4023

Am
Card 2/2

L 62676-65   EWA(k)/FBD/EWT(l)/EWT(m)/EEC(k)-2/T/EWP(t)/EEC(b)-2/EWP(k)/
EWP(t)/EWA(m)-2/EWA(h)   SCTB/IJP(c)   WG/JD/JG
ACCESSION NR: AP5017491   UR/0368/65/002/006/0504/0509
                                                    535.89

AUTHOR: Burakov, V. S.; Zhukovskiy, V. V.; Samson, A. M.

TITLE: Determination of the parameters of a neodymium laser

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 6, 1965, 504-509

TOPIC TAGS: laser, neodymium laser, pump radiation absorption probability, in-
ternal loss coefficient, initial gain, laser characteristic

ABSTRACT: A method is proposed for determining the coefficient of internal losses,
the pump-radiation absorption probability, and the initial gain of a neodymium la-
ser from measurements of the buildup time of the stimulated emission. The method
proposed is simple and obviates the need for varying the lasing energy and the
lasing time. The method involves combining simplified theoretical equations based
on kinetic equations for the rate of change of the excess level population (in
the case of a four-level laser) with experimentally obtained oscillograms of the
pump radiation. The method was tested on a neodymium glass laser with a rod 120
mm long and 12 mm in diameter, and with an interferometer (60 cm base) with inter-
changeable mirrors. The test and data-reduction procedures are described briefly.
The results are in good agreement with the proposed theory and demonstrate that

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L 62676-65

ACCESSION NR: AP5017491   3

a probability-theory approach to the calculation of the properties of a laser
medium is valid. "The authors thank B. I. Stepanov for continuous interest in the
work and useful advice, and N. S. Yefimov and G. A. Kolosovskiy for help with the
measurements." Orig. art. has: 4 figures and 7 formulas.   [02]

ASSOCIATION: none

SUBMITTED: 18Jan65   ENCL: 00   SUB CODE: EC

NO REF SOV: 004   OTHER: 000   ATD PRESS: 4057

Card 2/2

L 2687-66   EWA(k)/FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(1)/T/EWP(k)/EED-2/EWA(h)/
ACCESSION NR: AP5021488   FCS(k)/EWA(m)-2   SCTB/   UR/0368/65/003/002/0128/0133
                                            IJP(c)   WH/WH/WG
AUTHOR: Gintoft, R. I.; Samson, A. M.;Sarzhevskiy, A. M.

TITLE: Dependence of certain ruby laser characteristics on the distance between
the interferometer mirrors

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 2, 1965, 128-133

TOPIC TAGS: ruby laser, laser pulsation, laser pumping, laser emission, laser
theory, laser optics

ABSTRACT: This is a continuation of an earlier work by the authors (ZhPS v. 2, 142,
1965) devoted to a study of the dependence of buildup time (time for appearance of first spike)
and pulsation period (average time between all spikes) of a ruby laser on the pump
energy. The study was made for the case when the reflecting coatings were depos-
ited on the ends of the ruby rod. The present investigation concerns a laser with
external mirrors, with a rod 6.5 mm in diameter and 81 mm long. The distance be-
tween the interferometer mirrors could be varied from 15 to 360 cm. The buildup
time and the pulsation period were measured at different pump powers. The results
show that at constant power both the buildup time and the pulsation period increase
with increasing distance between mirrors. The threshold pump energy likewise in-

Card 1/2

L 2687-66

ACCESSION NR: AP5021488

creases with the distance. The increase in the buildup time is attributed to an increase in the loss coefficient of the ruby. A comparison of the experimental results with the theoretical calculation confirms this assumption. It is also concluded that the results agree well with the probability-method equations derived earlier by one of the authors (Samson, Opt. i spektr. v. 16, 869, 1964 and later papers), especially with respect to the nonstationary laser emission, and that the study of the nonstationary emission makes it possible to investigate the proper-ties of the laser, the active medium, and the pump conditions. Orig. art. has: 3 figures, 4 formulas, and 2 tables. [02]

ASSOCIATION: none

SUBMITTED: 09Dec64   ENCL: 00   SUB CODE: EC

NO REF SOV: 004   OTHER: 000   ATD PRESS: 4/02

Card 2/2

L 14551-66   FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWG(m)/T/EWP(t)/EWP(k)/EWP(b)/EWA(h)

ACC NR: AP6005469 IJP(c)   RDW/WG/JD/ SOURCE CODE: UR/0368/66/004/001/0020/0029
WH

AUTHOR: Savva, V. A.; Samson, A. M.; Drabovich, K. N.

ORG: none

TITLE: Laser calculations for the case of instantaneous loss cutoff

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 1, 1966, 20-29

TOPIC TAGS: laser theory, ruby laser, neodymium glass, quantum resonance phenome-
non

ABSTRACT: The authors consider ruby and neodymium lasers with rapid Q-switching.
The calculations are based on approximate methods which take account of pulse shape.
The limits of applicability and accuracy of the formulas are discussed. Kinetic
equations for population inversion and an equation for radiation density are given
as a basis for calculating nonstationary emission from lasers with controlled reso-
nance. Formulas are given to account for the increase in population inversion due
to pumping radiation and the reduction in inversion due to relaxation for ruby and
for neodymium glass. These equations describe pulsed emission as a special case of

UDC: 621.375.9 : 535.89

Card 1/2

L 14551-66
ACC NR: AP6005469 α

nonstationary laser emission. It is found from an analysis of these equations and
their numerical solution that de-excitation of the energy stored in the laser takes
place extremely rapidly so that population inversion is practically unaffected by
pumping and relaxation. The original system of equations was solved on a digital
computer and a new system of equations was derived in which the increase in popula-
tion due to spontaneous transitions is disregarded. The two systems of equations
are used in conjunction, the first giving the energy, power, and duration of the
pulse and the second giving the shape. An expression is derived for the optimum
ratio between detrimental and useful energy losses. An analysis of curves plotted
from this formula shows that optimum conditions for a laser with pulse resonance are
possible if the ratio of the initial amplification to losses is less than 3.5. Op-
timum mirrors for a pulsed laser will be somewhat different from those for station-
ary emission. Specific examples are given for neodymium glass and a ruby rod. "In
conclusion the authors are deeply grateful to B. I. Stepanov for valuable consulta-
tion." Orig. art. has: 4 figures, 1 table, 22 formulas.   [14]

SUB CODE: 20/   SUBM DATE: 25May65/   ORIG REF: 007/   OTH REF: 004
ATD PRESS: 4/97

Card 2/2

L 45732-66   EEC(k)-2/EWP(k)/EWT(1)/EWT(m)/T/EWP(e)   IJP(c)   WG/WH
ACC NR: AP6027897   SOURCE CODE: UR/0368/66/005/001/0036/0044

63
62
B

AUTHOR: Samson, A. M.

ORG: none

TITLE: The effect, of amplified luminescence on the generation characteristics of
solid state lasers

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 1, 1966, 36-44

TOPIC TAGS: solid state laser, laser emission, laser energy, ruby laser, neodymium glass
laser, laser pumping

ABSTRACT: The author investigates the   effect of amplified luminescence on the generation
capacity   of lasers depending on the dimensions of the rods. The calculations are performed
for polished ruby and neodymium-glass rods.. The study is performed to determine the .ef-
fect   of amplified luminescence on the threshold and generation power as a function of the
length of the rod, the reflection coefficients of the outer mirrors, and the parameters of the
internal losses. It is shown that an increase in the rod length -   may lead to a break in the

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L 457d2-66

ACC NR: AP6027897

generation, and that with standard rod lengths the threshold is several times higher than when the amplified luminescence is not taken into account. In conclusion, the author expresses his deep gratitude to B. I. Stepanov for his attention to the work and for valuable comments. Orig. art. has: 15 formulas, 2 tables, and 4 figures. [26]

SUB CODE: 20/ SUBM DATE: 07Jul65/ ORIG REF: 008/ ATD PRESS: 5085

Card 2/2 pb

L 44794-66   EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(k)   IJP(c)   WG/WH

ACC NR: AP6030712   SOURCE CODE: UR/0368/66/005/002/0158/0166

AUTHOR: Savva, V. A.; Samson, A. M.; Drabovich, K. N.

ORG: none

TITLE: Lasers with linear Q-switching

SOURCE: Zhurnal prikladnoy spektroskopii, v, 5, no. 2, 1966, 158-166

TOPIC TAGS: laser theory, solid state laser, neodymium glass laser, Q switching, LASER PULSATION, LASER ENERGY

ABSTRACT: An analytical method was proposed for calculating the maximum power, energy, duration, and number of pulses of a giant-pulse laser with linear Q-switching. As an example, the emission of a giant-pulse neodymium glass laser was calculated by means of a digital computer and compared with results of the proposed method. The analytical method can be used to obtain analogous formulas for calculating the radiation in a laser beam switched by means of a prism rotating at any speed, and in the case of lasers with passive Q-switching. Orig. art. has: 1 table, 2 figures, and 34 formulas.   [YK]

SUB CODE: 20/ SUBM DATE: 09Sep65/ ORIG REF: 008/ ATD PRESS: 5078

Card   1/1   blg   UDC: 535.89

L 07242-67   EEC(k)-2/EWP(k)/EWT(1)   IJP(c)   WG

ACC NR: AP6029649   SOURCE CODE: UR/0250/66/010/008/0553/0557

AUTHOR: Samson, A. M.

ORG: Institute of Physics, AN BSSR (Institut fiziki AN BSSR)

TITLE: Computing spectral width of emission of solid state lasers operating under nonstationary conditions

SOURCE: AN BSSR. Doklady, v. 10, no. 8, 1966, 553-557

TOPIC TAGS: solid state laser, laser radiation, laser radiation spectrum

ABSTRACT: Under nonstationary conditions many types of oscillation (modes) are simultaneously generated unless measures are taken to select them. In lasers with plane-parallel mirrors every generating mode can be described with adequate accuracy by a plane wave of a certain frequency and direction. Consequently the coexistence of many modes unavoidably increases angular and spectral width of emission. In a laser with uniformly broadened line of luminescence the relative change in radiation density $u_i(t)$ and $u_j(t)$ of the ith and j^{th} mode, respectively, are described by

$$\frac{u_i(t)}{u_i(0)} = \left[\frac{u_j(t)}{u_j(0)}\right]^{\varkappa_i/\varkappa_j} \exp\left\{-\frac{v\,\varkappa_i}{1+Lv/lc}\left[\frac{1}{\varkappa_i}\int_0^t k_i^{loss}(t')\,dt' - \frac{1}{\varkappa_j}\int_0^t k_j^{loss}(t')\,dt'\right]\right\}.$$

Card   1/2

L 07242-67

ACC NR: AP6029649

where $u_i(0)$ and $u_j(0)$ are initial densities; k_i and k_j, extreme values of the amplification factors (all particles being on the metastable level); $k_i^{loss}(t')$ and $k_i^{loss}(t)$ are loss factors; L is the length of air gap in resonator; 1, the length of active rod; and v and c are speed of light in the material and in air. When loss factor and extreme values of amplification factors of angle and frequency are known, the spectral and angular width of radiation for many modes may be found; spectral width is easier to determine; the angular relationship is more complex. The author applies this formula to peak generation, spectral composition of radiation under multi-pulse conditions, and with open and closed shutters. In conclusion the author expresses his deep thanks to B. I. Stepanov for attention to the work. The paper was presented by B. I. Stepanov, Academician of the AN BSSR. Orig. art. has: 13 formulas.

SUB CODE: 20/ SUBM DATE: 03Mar66/ ORIG REF: 009/ OTH REF: 004

Card 2/2

L 36428-66   EWT(1)/EWT(m)/EWP(e)   IJP(c)   WH

SOURCE CODE: UR/0051/66/020/005/0848/0852

ACC NR: AP6015428

AUTHOR: Samson, A. M.; Kotomtseva, L. A.

ORG: none

TITLE: Calculation of amplified luminescence in a polished generating rod

SOURCE: Optika i spektroskopiya, v. 20, no. 5, 1966, 848-852

TOPIC TAGS: light reflection coefficient, luminescence, quantum generator, neodymium glass, ruby

ABSTRACT: Using formulas derived earlier for the brightness of noises on the axis of a polished cylinder, the authors analyze the angular distribution of noise brightness due to luminescence, and the density of the noises is calculated for various sizes of the rod and values of the negative absorption coefficient. The cylinder has a finite length, an amplification factor k that is constant throughout its volume, and an emissivity ϵ. The dependence of the luminescence brightness along the axis of the rod on the direction of propagation was determined, and the probability of luminescence-stimulated emission was calculated. Concrete calculations, in which the coefficients of reflection from the ends of the rod were neglected, were carried out for ruby and neodymium glass samples. Comparison of the results of rigorous calculations with the results of approximate calculations based on simplified transport equations (A. M.

UDC: 621.375.9:535

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L 36428-66

ACC NR: AP6015428   /

Samson, Zh. prikl. spektr. 2, 232, 1965; 2, 299, 1965) shows a satisfactory agreement.
In conclusion, the authors are deeply grateful to B. I. Stepanov for his attention to
this work. Orig. art. has: 3 figures, 2 tables, and 17 formulas.

SUB CODE: 20/ SUBM DATE: 25Jan65/ ORIG REF: 004

Card 2/2

ACC NR: AP6034184   SOURCE CODE: UR/0250/66/010/010/0739/0743

AUTHOR: Samson, A. M.

ORG: Institute of Physics, AN BSSR (Institut fiziki AN BSSR)

TITLE: Passage of a radiative single pulse through amplifying and absorbing media

SOURCE: AN BSSR. Doklady, v. 10, no. 10, 1966, 739-743

TOPIC TAGS: light radiation effect, light velocity, light pulse

ABSTRACT: Mathematical relations describing the propagation intensity of a single pulse $S(x,t)$ and the inverse population level $y(x,t)$ in an amplifying media at point x were developed; the relations take into account the velocity of light propagation (v) in matter. The relations were applied to a study of the inverse population level and of the radiative intensity in an active core. The pattern of the motion of different branches of the inverse population are described analytically. It appears that v^* may be either positive or negative, depending on the intensity of the descending flow. At a point where the inverse population is minimal, $v^* = \pm\infty$. It is calculated that if $\tau_0 = 4 \cdot 10^{-9}$ sec, the initial acceleration coefficient $x y_0' = 0.2$ cm^{-1}, the coefficient of internal losses $\rho = 0.03$ cm^{-1}, $v = 1.7 \cdot 10^{10}$ cm sec^{-1}, and then $v^*/v = 0.1$, indicating that the motion of the descending branch $y(x,\tau)$ takes place in the opposite direction at a rate which is smaller than the speed of light by a factor of 10. When $x \to \infty$,

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ACC NR: AP6034184

the impulse degenerates into a δ-function. It appears that neither the characteristics of the pulse, nor of matter in a real bar have the property of being faster than light. Presented by Academician B. I. Stepanov, AN BSSR. Orig. art. has: 2 figures, 10 formulas.

SUB CODE: 20/   SUBM DATE: 09Jul66/   ORIG REF: 009/   OTH REF: 002

Card 2/2

ACC NR: AP6027313   SOURCE CODE: UR/0428/66/000/002/0099/0108

AUTHOR: Samson, A. M.

ORG: none

TITLE: Nonstationary emission of light by four level luminous generators

SOURCE: AN BSSR. Vesti. Seryya fizika-matematychnyckh navuk, no. 2, 1966, 99-108

TOPIC TAGS: light emission, mathematic analysis, kinetic equation, light absorption, optic property, geometric optics

ABSTRACT: Great power in the excited light is required to create a negative absorption coefficient in substances with three energy levels (i.e., ruby). The threshold value of this power is appreciably lower in materials whose optical properties may be described by a four-level scheme (fluorites of samarium and uranium glass containing neodimium, rare earths, etc.). Light generation in these substances has a number of features differing from that in ruby. At the same time, the mathematical description of these systems is more complex because of the greater number of initial levels. The present author analyzes nonstationary light emission by four-level generators. Population and density of the levels are shown graphically and by basic equations: It is concluded that the pulsed regime of a four-level generator is fundamentally described by the same factors as the three-level generator. It is shown that there are three particular conditions under which this occurs. In conclusion, the author

Card 1/2

ACC NR: AP6027313

expresses his great thanks to B. I. Stsyapanov for his attention to the work. Orig. art. has: 43 formulas, 1 table, and 1 figure.

SUB CODE: 20/ SUBM DATE: 28Dec64/ ORIG REF: 008/ OTH REF: 003

Card   2/2

ACC NR: AP0054212

AUTHOR: Samson, A. M.; Drabovich, K. N.; Savva, V. A.

ORG: none

TITLE: Calculation of characteristics of a laser with bleachable filter

TOPIC TAGS: solid state laser, laser modulation, laser theory, passive Q switch, bleachable filter, laser pulsation, laser pulsing, laser optic material

ABSTRACT: Conditions of a single pulse generation of a laser with bleachable shutter operating as a two level system were described by a system of three nonlinear differential equations. The equations take more complete account than before of the effects of properties of the active laser material, of the pumping of the laser, and of the relaxation effect in both the laser and filter. One of the equations described the kinetics of bleaching in terms of the probability of transitions from the second to the first energy level (relaxation) in the substance of the filter. Criteria were formulated, on the basis of three equations, for generating a single giant pulse and for selecting substances for the passive shutter. The substances with a narrow absorption spectral line and a short life time of the meta- stable state may be selected for passive shutters. Dependence of the output power,

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UDC: 621.375.9

ACC NR: AP6034212

energy, and duration of a single pulse on the laser parameters was deduced from the set of the same three equations. The optimum laser parameters for obtaining short and powerful pulses may be determined from the formulated dependence. Orig. art. has: 25 formulas, 2 figures, and 1 table.   [WA-67]

SUB CODE: 20/ SUBM DATE: 06Oct65/ ORIG REF: 008/ OTH REF: 005

Card 2/2

ACC NR: AP7003148   SOURCE CODE: UR/0368/66/005/006/0718/0723

AUTHOR: Samson, A. M.

ORG: none

TITLE: Dependence of laser single-pulse characteristics on the active rod length

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 6, 1966, 718-723

TOPIC TAGS: laser, ruby laser, neodymium laser, glass laser, laser efficiency, laser operating-characteristics

ABSTRACT:
The dependence of population inversion on rod length in the case of
ruby and neodymium glass laser rods was investigated. The analysis pro-
ceeds from several earlier works by the author (Zhurnal prikladnoy
spektroskopii, 2, 1965, 232; Optika i spektroskopiya, 20, 1966, 848;
Vestsi AN BSSR, ser. fiz.-mat. no. 4, 1965, ibid, no. 2, 1966). The
required pumping rates at a given rod length increase with gain in a
nonlinear manner. The population inversion drops with increasing rod
length. The formulas describing the above relationship make it possible
to estimate the total energy stored in a rod of certain length at any
pumping input. The energy storage curves as a function of rod length
reach their maximum and level off at rod lengths of 10 to 20 cm for both

Card   1/2   UDC: 535.89

ACC NR: AP7003148

ruby and glass. The radiation power as a function of rod length, however, shows a maximum around the 10-cm rod length and then diminishes with longer rods because of the Fresnel reflection from the ends. The most efficient laser action, according to the calculations, can be achieved with rapid (about 1 to 10 nsec in 3- and 4-level lasers) Q-switching, provided the dependence of emitted power on the coefficient of useful losses is investigated and the position of its maximum is determined.

Orig. art. has: 2 figures and 11 formulas.

SUB CODE: 20/ SUBM DATE: 28Feb66/ ORIG REF: 007/ OTH REF: 001/
ATD PRESS: 5113

Card 2/2

SAMSON, A. S.

Cand Tech Sci - (diss) "Paper-making machine as an objective of control and several approaches to its complete automation." Leningrad, 1961.   15 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Order of Lenin Forestry Engineering Academy imeni S. M. Kirov); 150 copies; free; (KL, 5-61 sup, 195)

PATRASCU, Al., ing.; SAMSON, Fl.

Automatic machines for the glazing of ceramic products.
Industria usoara 3 no.11:468-472 N '56.

GRIDIN, A.D., inzh.; SAMSON, G.N., inzh.; PRUDKIN, Ya.M., inzh.; KOVALEV,
I.G., inzh.

Ways of obtaining a record-high operative capacity of coal
cutter loaders. Ugol' 37 no.8:49-56 Ag '62.   (MIRA 15:9)

1. Gosudarstvennyy proyektno-konstruktorskiy i eksperimental'nyy
institut ugol'nogo mashinostroyeniya.
                              (Coal mining machinery)
                  (Coal mines and mining--Labor productivity)

ACC NR: AP6020838   SOURCE CODE: HU/0018/65/017/005/0454/0457

AUTHOR: Benyo, Imre; Fusy, Fridolin; Ihasz, Mihaly; Varga, Lajos (Technical
assistant); Samson, Lenke (Technical assistant)
ORG: II. Surgical Clinic, Medical University of Budapest (II. sz. Sebeszeti Klinika,
BOTE -- Budapesti Orvostudomanyi Egyetem)

TITLE: Effect of short-wave irradiation of the liver on the elimination of
bromsulphalein from the blood

SOURCE: Kiserletes orvostudomany, v. 17, no. 5, 1965, 454-457

TOPIC TAGS: liver, blood, radiotherapy, hematology, radiation biologic effect

ABSTRACT: On the basis of controlled
studies performed on subjects with normal liver function, it has been
determined that the elimination of bromsulphalein from the blood is
significantly increased by 15 minutes of short-wave irradiation of the
liver. As a result of the irradiation, the dye retention in the blood
was decreased by 19 per cent within 7 minutes and by 54 per cent within
15 minutes, in comparison with the controls. The phenomenon is thought to
be related to an increased liver perfusion due to the radiation. The
clinical therapeutic aspects of this observation are discussed. Orig. art. has:
1 table. [JPRS]

SUB CODE: 06 / SUBM DATE: 10Jul64 / ORIG REF: 002 / OTH REF: 012

Card 1/1

L 32223-66

ACC NR: AP6020837   SOURCE CODE: HU/0018/65/017/005/0449/0453

AUTHOR: Benyo, Imre; Fusy, Fridolin; Gorgo, Pal; Ihasz, Mihaly; Samson, Lenke 22
(Technical assistant); Varga, Lajos (Technical assistant)   B

ORG: II. Surgical Clinic, Medical University of Budapest (II. sz. Sebeszeti Klinika,
BOTE — Budapesti Orvostudomanyi Egyetem)

TITLE: Acidification of the duodenum and the elimination of Bromsul phalein from
the blood

SOURCE: Kiserletes orvostudomany, v. 17, no. 5, 1965, 449-453

TOPIC TAGS: liver, drug effect, blood

ABSTRACT: According to the results of studies performed on subjects with normal
liver function, a dilute (2 ml/kg; 0.35 per cent) HCl solution, when injected into
the duodenum, increases noticeably the elimination of bromsulphalein (Used for i.v.
liver function tests) from the blood. Reference is made to the mechanism of the
phenomenon. Orig. art. has: 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 10Jul64 / ORIG REF: 005 / OTH REF: 009

Card 1/1

DYMEK, Wojciech; JANIK, Boleslaw; SAMSON, Oktawian

Studies on pyrazole derivatives. I. Acta Pol. pharm. 21 no.2:
211-216 '64.

1. Z katedry Chemii Farmaceutycznej Akademii Medycznej w Krakowie
(Kierownik: prof. dr. W. Dymek).

SAMSON, O.P.

Device for boring agricultural machinery parts. Mekh. sil'. hosp.
11 no.11:6-7 N '60.   (MIRA 13:11)

1. Glavnyy inzhener Rogatinskoy rayonnoy traktornoy stantsii,
Stanislavskoy oblasti.
                    (Drilling and boring machinery)

SAMSON, O.P.

Self-feeder for swine. Mekh. sil'. hosp. 11 no.12:24 D '60.
(MIRA 13:12)

1. Holovnyi inzhener Rohatyns'koi RTS, Stanislavs'koi oblasti.
(Swine—Feeding and feeds)

SAMSON, P.; RADULESKU, K. [Radulescu, C.]

    "La Adam" Paleolithic caves in the Dobruja. Biul. Kom. chetv.
    per. no.29:156-164 '64.   (MIRA 17:8)

SAMSON, V. [Samsons, V.] akademik-sekretar'

Basic trends in the research of the Academy of Sciences of the Latvian
S.S.R. in 1961. Vestis Lat ak no.2:17-29 '61.

1. AN latviyskoy SSR.

SAMSON, Ye.I., dotsent

Effect of intravenous infusions of novocaine on the course of peptic ulcer. Terap.arkh. 28 no.8:47-52 '56.   (MLRA 10:2)

1. Iz gospiral'noy terapevticheskoy kliniki (zav. - prof. V.A.Triger) Chernovitskogo meditsinskogo instituta.
            (PEPTIC ULCER, ther.
                procaine, intravenous)
            (PROCAINE, ther. use
                peptic ulcer, intravenous infusions)

SAMSON, Ye.I., dotsent (Chernovtsy)

Late results of treating peptic ulcer with sleep and novocaine.
Klin.med. 34 no.10:54-55 O '56.   (MLRA 10:1)

1. Iz gospital'noy terapevticheskoy kliniki (zav. - prof. V.A.Triger)
Chernovitskogo meditsinskogo instituta (dir. - dotsent M.M.Kovalev)
            (PEPTIC ULCER, ther.
                 procaine & sleep)
            (SLEEP, ther. use
                 peptic ulcer, with procaine)
            (PROCAINE, ther. use
                 peptic ulcer, with sleep)

SAMSON, Ye.I.,dots.

Clinical basis for novocaine therapy in peptic ulcer.   Vrach.delo
supplement '57:30   (MIRA 11:3)

1. Gospital'naya terapevticheskaya klinika (zav.-prof. V.A. Triger)
Chernovitskogo meditsinskogo instituta.
          (PEPTIC ULCER) (NOVOCAINE)

SAMSON, Ye,I,, dotsent

Peculiarities of base plethysmograms and unconditiioned vascular
reflexes in patients with peptic ulcer. Vrach.delo no.7:763-765
Jl '57.   (MLRA 10:8)

1. Gospital'naya terapevticheskaya klinika (zav. - prof. V.A.Triger)
Chernovitskogo meditsinskogo instituta
        (PLETHYSMOGRAPHY)   (PEPTIC ULCER)   (REFLEXES)

SAMSON, Ye.I., dots. (Chernovtsy)

Mechanism of the therapeutic action of intravenous novocaine injections in ulcers. Vrach.delo no.11:1187-1191 N '57. (MIRA 11:2)

1. Gospital'naya terapevticheskaya klinika (zav. - prof. V.A.Triger) Chernovitskogo meditsinskogo institut₀ i laboratoriya kortikcvistseral'noy patologii (zav. - prof. I.T.Kurtsin) Instituta fiziologii AN SSSR im. I.P.Pavlova.
(PEPTIC ULCER) (NOVOCAINE)   (INJECTIONS, INTRAVENOUS)

SAMSON, Ye.I.

Comparative rating of the treatment of peptic ulcer with sleep and
novocaine. Sov.med.21 Supplement:3 '57.   (MIRA 11:2)

1. Iz gospital'noy terapevticheskoy kliniki Chernovitskogo meditsin-
skogo instituta.
          (PEPTIC ULCER)   (SLEEP--THERAPEUTIC USE) (NOVOCAINE)

SAMSON, Ye.I., kand.med.nauk (Chernovitsy)

Peculiarities of gastric secretory and notor function in peptic
ulcer. Klin.med. 35[i.e.34] no.1 Supplement:17 Ja '57. (MIRA 11:2)

1. Iz gospital'noy terapevticheskoy kliniki (zav. - prof. V.A.Triger)
Chernovitskogo meditsinskogo instituta.
        (PEPTIC ULCER)   (STOMACH--SECRETIONS)

SAMSON, Ye.I.

Changes in the higher nervous activity following intravenous
administration of novocaine [with summary in English]. Zhur.vys.
nevr. deist. 8 no.6:911-918 N-D '58   (MIRA 12:1)

1. Laboratory of Cortico-Visceral Pathology, Pavlov Institute
of Physiology USSR Academy of Sciences, Leningrad.
          (REFLEX, CONDITIONED,
                eff. of procaine in dogs (Rus))
          (PROCAINS, effects,
                on conditioned reflex activity in dogs (Rus))

SAMSON, Ye. I.

Effect of novacaine therapy on cardiovascular function in patients
with peptic ulcer. Vrach.delo no.8:875 Ag '59.   (MIRA 12:12)

1. Gospital'naya terapevticheskaya klinika (zav. - prof. V.A. Triger)
Chernovitskogo meditsinskogo instituta.
     (NOVACAINE)   (CARDIOVASCULAR SYSTEM)   (PEPTIC ULCER)

SAMSON, Ye.I., dotsent (Chernovtsey)

Comparative evaluation of immediate and late results in the treatment
of peptic ulcer. Klin.med. 37 no.10:79-84 O '59.   (MIRA 13:2)

1. Iz gospital'noy terapevticheskoy kliniki (zaveduyushchiy - prof.
V.A. Triger) Chernovitskogo meditsinskogo instituta (direktor -
dotsent M.M. Kovalev).
          (PEPTIC ULCER therapy)

SAMSON, Ye.I., dotsent

Importance of blood transfusion among other mehtods of treating
peptic ulcer. Vrach.delo no.4:361-364 Ap '60. (MIRA 13:6)

1. Gospital'naya terapevticheskaya klinika (zav. - prof. V.A.
Triger) Chernovitskogo meditsinskogo instituta.
(PEPTIC ULCER) (BLOOD--TRANSFUSION)

SAMSON, Ye.I., doktor med.nauk; KONDRATSKAYA, N.K., kand.med.nauk

Peculiarities in stomach function in chronic cholecystitis. Vrach.
delo no. 3:41-44 Mr '61.   (MIRA 14:4)

1. Gospital'naya terapevticheskaya klinika (zav. - prof. V.A.
Triger) Chornovitskogo meditsinskogo instituta.
              (STOMACH)   (GALL BLADDER—DISEASES)

SAMSON, Ye.I., dotsent

Influence of hexamethon on capillary function in peptic ulcer.
Vrach. delo no.4:131-132 Ap '61.   (MIRA 14:6)

1. Gospital'naya terapevticheskaya klinika (zav. - prof. V.A.Triger)
Chernovitskogo meditsinskogo instituta.
          (PEPTIC ULCER)   (AUTONOMIC DRUGS)
                    (CAPILLARIES)

SAMSON, Ye.I., doktor med.nauk

    Characteristics of the course of peptic ulcer in aged subjects.
    Terap.arkh. 33 no.3:54-58 Mr '61.   (MIRA 14:3)

    1. Iz gospital'noy terapevticheskoy kliniki (zav. - prof. V.A.
    Triger) Chernovitskogo meditsinskogo instituta.
                    (PEPTIC ULCER)

SAMSON, Ye.I., prof.

Characteristics of protein metabolism in patients with peptic ulcers
of the stomach and the duodenum. Vrach. delo no.3:34-37 Mr '64.
(MIRA 17:4)

1. Gospital'naya terapevticheskaya klinika (zav. - prof.
V.A.Triger) Chernovitskogo meditsinskogo instituta.

SAMSON, Ye.I., prof.; KIMLACH, L.F.; VAYNER, N.B.

Results of antirelapse treatment of patients with peptic ulcer.
Sov. med. 28 no.6:57-61 Je '65.   (MIRA 18:8)

1. Gospital'naya terapevticheskaya klinika (zav.- prof. V.A.
Triger) Chernovitskogo meditsinskog• instituta i klinicheskaya
bol'nitsa Nr.1 (glavnyy vrach L.F. Kimlach).

SAMSON, Ye. N., Doc Med Sci—(diss) "Clinico-experimental substantiation

of novocaine therapy in the ulcer disease." Len, 1958. 23 pp (Acad Sci

USSR. Inst of Physiology im I.P. Pavlov), 100 copies. List of author's

works at end of text (14 titles) (KL, 30-58,131)

— /27 —

AUTHORS: Sklyarenko, S. I.; Markin, B. I., 76-32-3-30/43
    Samson, Yu. U.

TITLE: The Measurement of the Pressure of Saturated Vapor in
   the Range of 0.1-10 mm Hg   (Izmereniye
   davleniya nasyshchennogo para v predelakh 0.1-10 mm rt. st.)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol 32, Nr 3,
     pp 692-696 (USSR)

ABSTRACT: As the most employed kind of determination by the method
    of removal at low pressure is very imperfect, a new
    method was sought and the static method was chosen. In
    principle it consists in evaporating the test substance
        in a closed, evacuated space until the
    osmotic equilibrium, which is measured by a MacLeod
    manometer, is attained. From the given explanation of
    construction and the drawing of the apparatus, follows
    that it consists of a vacuum, evaporation and measurement
    system. The evaporation system is connected with a
    thermostat IU 15 and has a diaphragm manometer, whereas

Card 1/3   the measurement system, beside the MacLeod manometer, has

The Measurement of the Pressure of Saturated   76-32-3-30/43
Vapor in the Range of 0.1-10 mm Hg

two containers for a precise determination of the
pressure measurements. The method of working is described.
The diaphragm manometer can be used as a measuring or
a zero instrument. The control of the manometer constant
of the Mac Leod manometer was performed for pressures of
0.1-3 mm. Hg . with nitrobenzene and for pressures of
3-10 mm Hg . with n-butanol and the obtained values
were compared with those according to Kahlbaum (reference7)
and given in tables. The determinations of the pressure
of saturated vapor of butyric acid yielded results which
were in a fairly rectilinear order. They could, however,
not be compared with published data, as these are too
different. The same determinations performed with iodine
vapors proved the applicability of the method for
investigations at lower temperatures. The obtained values
are given in tables, where a limit of error of 1-2% is
given. There are 3 figures, 2 tables, and 6 references,
) of which are Soviet.

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The Measurement of the Pressure of Saturated
Vapor in the Range of 0.1-10 mm Hg.

76-32-3-30/43

SUBMITTED: March 27, 1957

Card 3/3

76-32-5-31/47

AUTHORS: Sklyarenko, S. I.,   Samson, Yu. U.

TITLE: Method and Techniques of Physical-Chemical Investigations
             (Metody i tekhnika fiziko-khimicheskogo issledovaniya)
             A Method for the Determination of the Total and Partial Sa-
             turated Vapor Pressures of Liquid Binary Mixtures Within
             the Range of From o,1 - 1o   Torr.(Metod opredeleniya
             obshchego i partsial'nykh davleniy nasyshchennykh parov
             zhidkikh binarnykh smesey v predelakh o,1 - 1o mm rt. st.)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 5, pp.1149-1152
             (USSR)

ABSTRACT: The papers by D. P. Konovalov (Ref 1) and subsequent investi-
             gations contain experimental difficulties at low pressures,
             while by the use of the equation by Duhem (Refs 2, 3), the
             solution by Margules (Ref 4) and a simplification by Duhem
             (Refs 2, 3) experimental investigations can be simplified.
             In the present paper the earlier investigated method of the
             determination of the saturated solution pressure of individual
Card 1/3   substances is applied by means of a membrane manometer with

Method and Techniques of Physical-Chemical Investigations. A Method for the Determination of the Total and Partial Saturated Vapor Pressures of Liquid Binary Mixtures Within the Range of From 0,1 - 10   Torr.

76-32-5-31/47

a series of essential changes and completions having been carried out. A plant was constructed which is schematically represented, and which consists of a vacuum-, measuring- and calibration system, the first being of the usual type. The measuring system serves for the formation of the vapor equilibrium and the measurement, as well as for the sample taking of the vapors for analysis. The system is connected with a thermostat, it has, besides the membrane manometer also a MacLeod manometer, and, like the major part of the plant, is made of molybdenum glass which makes possible the work with chemically active substances. The amount of the substance to be investigated is given to be 1 - 2 ml with an accuracy of 1 % being achieved by measuring the pressure, analyzing the vapor and computing the partial pressure of the saturated vapor by means of a formula. In order to be able to carry out the measurements the membrane manometer must be calibrated at the temperature of the experiment, the calibration curve being a straight, the angular coefficient of which increases a little with the rise of temperature. The

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76-32-5-31/47

Method and Techniques of Physical-Chemical Investigations. A Method for the Determination of the Total and Partial Saturated Vapor Pressures of Liquid Binary Mixtures Within the Range of From 0,1 - 10   Torr.

exact description of the plant is given as well as that of the working and measuring technique, and the membrane calibration; the authors point out the annealing of the membrane manometer prior to its use. There are 1 figure and 9 references, 4 of which are Soviet.

SUBMITTED: March 25, 1957
              1. Solutions--Vapor pressure   2. Vapor pressure--
              Determination   3. Mathematics--Applications

Card 3/3

05844

28 (4)
AUTHORS:

Sklyarenko, S. I., Samson, Yu. U.,
Baru, V. Ye.

SOV/76-33-10-42/45

TITLE:

An Apparatus Used for Measuring the Electrical Conductivity of
Anhydrous Solutions

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 10, pp 2375 - 2378
(USSR)

ABSTRACT:

Since an accuracy of measurement of $1-2\%$ is sufficient for many
investigations of electrical conductivity, the authors devised
a method used for rapid plotting of curves of electrical con-
ductivity. Moisture traces are not allowed to enter the solution,
and the afore-mentioned accuracy of measurement is guaranteed.
The apparatus designed for such purposes (Fig 1) contains an
electrolytic cell with platinum electrodes placed in a vessel
which is regulated by a TS-15 thermostat. There are also two
containers serving the measurement of liquids. The entire ar-
rangement is mounted on a perpendicular hemispherical plate.
The latter features three indentations at the edge so that it
may be brought into three different positions by rotation. The
liquid may thus be poured in, and the vessel can be brought in-
to the position of measurement. The design of the apparatus is

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An Apparatus Used for Measuring the Electrical
Conductivity of Anhydrous Solutions

05844

SOV/76-33-10-42/45

based on the principle of a Wheatstone bridge circuit. It con-
tains an LV9-2 valve voltmeter and a ZG-12 sound generator as
alternating-current source. The solution is prepared and filled
into the ampoule in a hermetically sealed chamber (Fig 2). The
technique is described in detail. The electrolytic capacity of
the cell was measured with the help of a potassium chloride so-
lution; it was 0.272 cm^{-1}. The operation of the apparatus was
checked by measuring the electrical conductivity of acetic acid
solutions (Table). The resultant values are in good agreement
with publications. The authors measured the electrical conduc-
tivity of the systems (1) silicon tetraiodide - pyridine,
(2) silicon tetraiodide - nitrobenzene (Fig 5), (3) silicon
tetraiodide - aniline, and (4) silicon tetraiodide - dichloro-
diethyl ether (Fig 6) at 25°. There are 6 figures, 1 table,
and 3 references, 2 of which are Soviet.

SUBMITTED: March 27, 1959

Card 2/2

S/078/62/007/012/001/022
B144/B180

AUTHORS: Sklyarenko, S. I.:(Deceased), Ruzinov, L. P., Samson, Yu. U.

TITLE: Thermodynamic calculation of electrochemical parameters of
             lower vanadium chlorides

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 12, 1962, 2645-2652

TEXT: The decomposition voltage of the lower vanadium chlorides is
calculated from their entropy, enthalpy, heat of phase transition, and
heat capacity. The enthalpies of vanadium tri and tetrachloride were
calculated by the methods of A. F. Kapustinskiy (Izv. AN SSSR. ser. khim.,
6, 568 (1948)), M. Kh. Karapet'yants (Dissertation, M., 1957), S. A.
Shchukarev, M. A. Oranskaya (Zh. obshch. khimii, 24, 2109 (1954)), and V.
P. Shishokin (Tr. Leningradsk. politekhn. in-ta im. Kalinina, 1955,
p. 117, 180). $\Delta H_{VCl_3}^{298} = -143$ and $\Delta H_{VCl_4}^{298} = -145$ kcal/mole were found by
averaging the values obtained by the 4 methods, and used for the subsequent
calculations. These only applied to VCl_2 and VCl_3, since VCl_4 is probably

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Thermodynamic calculation of ...

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not present in metal chloride electrolytes. Using the equations

$$\Delta H^T = \Delta H^{298} + \int_{298}^{T} \Delta C_p dT \text{ for the enthalpy, } S^T = S^{298} + \int_{298}^{T} C_p dT/T \text{ for the}$$

entropy, and $\Delta Z^T = \Delta H^T - T \Delta S^T$ for the changes in the decomposition potential of the relevant chlorides at constant temperature and pressure, the decomposition voltage was calculated from $E^T = \Delta Z^T/nF$. It was (v, at T, $^\circ$K) for VCl_2: 1.40 at 1300, 1.28 at 1500, and 1.19 at 1700; for VCl_3: 1.32 at 1000, 1.22 at 1200, and 1.12 at 1400°K. The temperature dependences derived from these values were: $E_{VCl_2} = 2.04 - 0.5 \cdot 10^{-3} T$;

$E_{VCl_3} = 1.68 - 0.383 \cdot 10^{-3} T$. Since under electrolysis conditions the melting points of the lower vanadium chlorides are above the temperature of the solvent melts, a liquid state was assumed for the vanadium chlorides and the decomposition voltages at 600, 700, 800, 900 and 1000°C

Card 2/3

Thermodynamic calculation of ...

S/078/62/007/012/001/022
B144/B180

were calculated (in v) for VCl_2: 1.60, 1.55, 1.50, 1.45, 1.40; for VCl_3:1.35, 1.31, 1.27, 1.23, 1.19. The voltage for the incomplete decomposition was calculated from $E_{VCl_3 \rightarrow VCl_2} = 3E_{VCl_3} - 2E_{VCl_2}$. At the above temperatures it was: 0.85, 0.83, 0.81, 0.79, and 0.77 v. The electrolyte should not contain VCl_3, since the metal is only deposited as a finely disperse powder when a high concentration of V^{2+} ions is reached by reducing the trivalent V. There are 7 figures and 6 tables.

SUBMITTED: May 14, 1962

Card 3/3

SAMSON, Yu.U.; RUZINOV, L.P.; RESHETNIKOVA, N.S.; BARU, V.Ye.

Electric conductivity of vanadium dichloride solutions in
a molten equimolecular mixture of sodium and potassium
chlorides. Zhur. fiz. khim. 38 no.2:481-483 F '64.
(MIRA 17:8)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
institut redkometallicheskoy promyshlennosti.

L 21790-66   E"T(m)/EPF(n)-2/EWA(d)/E"P(t)/F"A(h)   JD/WW/JG

ACC NR: AP6002914   SOURCE CODE: UR/0286/65/000/024/0074/0075

AUTHORS: Kotin, N. N.; Moskvitin, V. I.; Rozanov, N. N.; Nepomnyashchiy, I. V.;
Samson, Yu. U.; Smirnov, S. G.; Tsybul'skaya, Ye. D.

ORG: none

TITLE: An electrolyzer for producing high melting metals from molten mediums.
Class 40, No. 177085 announced by State Scientific Research and Design Institute
of the Rare Metals Industry (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
institut redkometallicheskoy promyshlennosti)/

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 74-75.

TOPIC TAGS: electrolytic cell, electrolytic extraction, metal electrolytic
deposition, metal purification

ABSTRACT: This Author Certificate presents an electrolyzer for obtaining high
melting metals from molten mediums. The electrolyzer is in the form of an air-
tight chamber with a cutting element for the cathode precipitate. The chamber has
a cathode and a circular anode (see Fig. 1). The electrolyzer produces a dense
cathode precipitate suitable for electric slag melting. The cathode of the

Card 1/2   UDC: 669.713.7.472

L 21790-66
ACC NR: AP6002914

Fig. 1. 1 - electrolyzer
chamber; 2 - die; 3 - shaft
of punch; 4 - cutter; 5 -
cross arm.
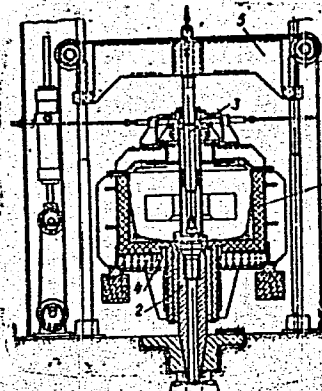
electrolyzer is a tubular cylinder mounted in the lower part of the electrolyzer.
A die is mounted in the cavity of the cathode cylinder and is used for pressing out
the cathode precipitate. The electrolyzer is provided with a device for pressing
out the cathode precipitate. This pressing device is in the form of a punch
fastened to a shaft. The shaft is connected to a cross arm which moves in a verti-
cal plane. The electrolyzer is also provided with a cutting element for cutting the
cathode precipitate. This cutter is mounted on the shaft of the punch and is
connected with the drive mechanism. Orig. art. has: 1 figure.
Card 2/2   SUB CODE:11, 09/SUBM DATE: 23May63

1. BABUK, V.; KALASHNIKOV, A.; MAKSIMCHUK, F.; SAMSONENKO, G.

2. USSR (600)

4. Gas and Oil Engines

7. Repair and assembly of the head of the block and cylinders of the DT-54 tractor.
   Tekhsov. MTS 13 no. 33, 1952

9. Monthly List of Russian Accessions, Library of Congress, January   1953. Unclassified.

1. SAMSONENKO, G., MAKSIMCHUK, F.

2. USSR (600)

4. Tractors

7. Features in the assembly and installation of some units of the DT-54 tractor.
   Tekhsov. MTS 13 No. 43, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February   1953. Unclassified.

SAMSONENKO, G.S. [Samsonenko, H.S.], inzh.; FEDOROVSKIY, L.Kh. [Fedorovs'kyi, L.Kh.], inzh.; SNYATKOV, L.A., inzh.

Organizing the detection of defects and supply of parts.
Mekh. sil'. hosp. 14 no.11:19-22 N'63.   (MIRA 17:2)

1. Ukrainskiy filial Gosudarstvennogo vsesoyuznogo nauchno-issledo-
vatel'skogo tekhnologicheskogo instituta remonta i ekspluatatsii
mashinno-traktornogo parka.

137-58-4-7149

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 120 (USSR)

AUTHORS: Zvorono, B. P., Petrova, Ye. N., Polilov, N. A., Vayner, Ye. L., Samsonenko, G. T.

TITLE: Designs of Medical Instruments Suitable for Production by Cold Extrusion (Konstruirovaniye meditsinskikh instrumentov dopus- kayushchikh kholodnoye pressovaniye)

PERIODICAL: Materialy po obmenu opytom i nauchn. dostizh. v med. prom- sti, 1957, Nr 4 (23), pp 90-106

ABSTRACT: The manufacture of medical instruments from blanks in the form of bodies of revolution produced by cold reducing, cross- rolling, or machined by template on a lathe is performed on or- dinary presses using open plates, with reduction by 50-60 percent in a single operation in the cold condition under unit pressures of 12-15 t/cm^2, offering the following advantages: replacement of the laborious operations of hand roughing and filing by machine operation, production of a high degree of surface finish without burrs or having no more than a thin flash, saving of metal, em- ployment of universal equipment, use of simple and cheap dies, repair of which may be done on a flat grinder. When high degrees

Card 1/2

137-58-4-7149

Designs of Medical Instruments Suitable for Production by Cold Extrusion

of reduction are required, the pressing is done in a number of passes, with high-temperature annealing performed between passes. Methods of calculating the initial blank and of designing the non-operating elements of the instrument, also examples of typical products manufactured in this manner, are presented.

1. Medical instruments--Production   2. Metals--Extrusion--Applications   Ye. L.

Card 2/2

L 42978-65   EWP(e)/EWT(m)/EPF(c)/EWP(i)/EPR/EWP(t)/EWP(b)   Pr-4/Ps-4   IJP(c)

JD/WH

ACCESSION NR: AP5009429   S/0289/64/000/C03/0156/0157

AUTHOR: Sobolev, Ye. V.; Samsonenko, I. D.; Lenskaya, S. V.

TITLE: The state of nitrogen present as an impurity in natural diamonds

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 3, 1964, 156-157

TOPIC TAGS: diamond structure, nitrogen admixture, infrared spectrum, ammonium tetraethylbromide, paramagnetic center, electron paramagnetic resonance

ABSTRACT: The authors studied the IR spectrum of ammonium tetraethyl bromide (containing a nitrogen atom bound to four carbon atoms) as a model system and determined the concentration of paramagnetic centers in diamonds by comparing this with the spectrum of a standard ($CuCl_2 \cdot 2H_2O$). They also determined the number of absorbing centers in the IR and ESR spectra. The study showed that C-N bonds should be present in diamonds: the formation of such bonds is thought to be due to the substitution of nitrogen for carbon. The discrepancy between the number of paramagnetic centers and the total number of nitrogen atoms is discussed. Variation in the ratio $\frac{N_{total}}{N_{param}}$ from one

Card 1/2

L 42978-65
ACCESSION NR: AP5009429

kind of diamond crystal to another are considered. Also treated is the problem of the influence of the conditions of formation of diamonds on the character of the ESR spectra. The authors express the hope that comparative studies of optical and ESR spectra of diamond crystals from various deposits will provide information on the conditions of their formation and their differences, which will be of unquestionable interest to crystal chemistry and geology.

ASSOCIATION: Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk (Institute of Inorganic Chemistry, Siberian Branch AN SSSR)

SUBMITTED: 09Jul64   ENCL: 00   SUB CODE: IC, MT

NO REF SOV: 003   OTHER: 005

Card 2/2

SAMSONENKO, K.I.

[Growing green forage by the hydroponic method] Vyrashchi-
vanie zeleni gidroponnym sposobom. Stavropol', Stavropol'skoe
knizhnoe izd-vo, 1964. 15 p.   (MIRA 18:8)

VISLOBOKOV, A.: VIKTOROVA, V., redaktor; SAMSONENKO, L. redaktor; MUKHIN,
Yu, tekhnicheskiy redaktor.

[Inseparability of matter and motion; popular sketch] O nerazryvnosti
materii i dvizheniia; popyliarnyi ocherk. Moskva, Gos.izd-vo polit.
lit-ry, 1955. 127 p.
(MLRA 8:8)
(Matter) (Motion)

SAMSONENKO, L. V.

Mystery of colliding galaxies. Tekh. mol. 26 no. 7:5 '58.
(MIRA 11:7)

(Galaxies)

PARSHIN, Igor' Aleksandrovich; SHARONOV, V.V., prof., red.; SAMSONENKO,
L.V., red.; AKSEL'ROD, I.Sh., tekhn.red.

[The moon] Luna. Pod red. V.V.Sharonova. Moskva, Gos.izd-vo
fiziko-matem.lit-ry, 1960. 53 p. (Populiarnye lektsii po astro-
nomii, vyp.10).   (MIRA 14:1)
(Moon)   (Lunar probes)

KHRENOV, Leonid Sergeyevich, prof.; SHCHERBINA, I.S.,red.; SAMSONENKO,
    L.V., red.; AKHLAMOV, S.N., tekhn.red.

[Tables of trigonometrical functions having six numbers; containing
natural values of six trigonometrical functions for each 10" from
0° to 360°, values of cotangents and cosecants for each 1" from 0°
to 3°05' and values of $\sin^2 \frac{x}{2}$ and $tg^2 \frac{x}{2}$ from 0° to 180°] Shesti-
znachnye tablitsy trigonometricheskikh funktsii; soderzhashchie natu-
ral'nye znacheniia shesti trigonometricheskikh funktsii cherez kazhdye
10" ot 0 do 360°, znacheniia kotangensov i kosekansov cherez 1" ot 0
do 3°05' i znacheniia $\sin^2 \frac{x}{2}$ and $tg^2 \frac{x}{2}$ ot 0 do 180°. Moskva, Gos.
izd-vo fiziko-matem.lit-ry, 1960. 372 p.   (MIRA 13:12)
        (Trigonometrical functions--Tables, etc.)

SAMSONENKO, L. V.

Life of a star. IUn. tekh. 5 no. 11:18-21 N '60. (MIRA 13:12)
(Stars)

KULIKOVSKIY, Petr Grigor'yevich; YERPYLEV, N.P., red.; SAMSONENKO, L.V.,
     red.; MURASHOVA, N.Ya., tekhn. red.

     [Handbook for amateur astronomers] Spravochnik liubitelia astrono-
     mii. Izd. 3., perer. i dop. Moskva, Gos. izd-vo fiziko-matem. lit-
     ry, 1961. 493 p.—— ——.—— Plates   (MIRA 14:6)
                              (Astronomy)

SAMSONENKO, L.

Watch the solar eclipse! IUn.tekh. 5 no.1:78-79 Ja '61.
(MIRA 14:5)

(Eclipses, Solar)

SAMSONENKO, L.

The planet Venus. IUn.tekh. 5 no.3:21-24 Mr '61.   (MIRA 14:6)

(Venus (Planet))

SAMSONENKO, L.

"Problem of three bodies." IUn.tekh. 5 no.4:54-56 Ap '61.
(MIRA 14:3)

(Problem of three bodies)

SAMSONENKO, L.

Books on problems in astronautics. Av.i kosm. 46 no.9:85-86 S
'63.

(MIRA 16:10)

SOV/30-59-1-54/57

AUTHORS: Biryukov, B. V., Samsonenko, L. V., Troitskiy, S. M.

TITLE: The First Volume of the History of the Academy of Sciences USSR
               (Pervyy tom istorii Akademii nauk SSSR)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 147-151 (USSR)

ABSTRACT: The subject of the present paper is the discussion of the book
               written by K. V. Ostrovityanov, Academician and Chief Editor
               by the above-mentioned reporters. The book was edited in 1957
               by the publishing house of the Academy of Sciences, USSR;
               (484 pp, 3500 copies, 26.65 rubles).
               There are 12 references, 11 of which are Soviet.

Card 1/1

BOCOYAVLENSKIY, G.P.; NEDOSEKIN, D.V.; MAL'CHEVSKIY, G.N., red.-sostavitel'
kart; BELEN'KIY, A.B., kand.istor.nauk; nauchnyy red.; GRIN, M.F.,
kand.ekonom.nauk, nauchnyy red.; ZABELIN, I.M., kand.geograf.nauk,
nauchnyy red.; SAMSONENKO, L.V., nauchnyy red.; FEADKIN, N.G.,
kand.geograf.nauk, nauchnyy red.; BELICHENKO, R.K., mladshiy
red.; VILENSKAYA, E.N., tekhn.red.

[The land and the people; the 1961 geographical calendar] Zemlia
i liudi; geograficheskii kalendar' 1961. Moskva, Izd-vo geogr.
lit-ry, 1960. 262 p. [__New construction projects, 1959-1965;
color map. Appendix to "Zemlia i liudi," the 1961 geographical
calendar] __Novostroiki semiletki, 1959-1965; tsvetnaia karta.
Prilozhenie k geograficheskomu kalendariu "Zemlia i liudi" na
1961 g.   (MIRA 14:1)
     (Geography)   (Russia--Industries--Maps)

BOGOYAVLENSKIY, G.P.; TIKHOMIROV, V.N.;-Prinimala uchastiye NEDOSEKINA,
D.V.; BELEN'KIY, A.B., kand. istorich. nauk, nauchnyy red.;
GRIN, M.F., kand. ekonom. nauk, nauchnyy red.; ZABELIN, I.M.,
kand. geogr. nauk, nauchnyy red.; SAMSONENKO, L.V., nauchnyy
red.; FRADKIN, N.G., kand. geogr. nauk; MAL'CHEVSKIY, G.N.,
red. kart; BELICHENKO, R.K., mladshiy red.; VILENSKAYA, E.N.,
tekhn. red.

[Land and people; geographical calendar for 1962]Zemlia i liudi;
geograficheskii kalendar' 1962. Moskva, Gos.izd-vo geogr. lit-
ry, 1961. 253 p. ___ [Africa, 1951 and 1961; colored maps.
Supplement] Afrika 1951 i 1961 gody; tsvetnye karty. Prilozhenie.
(MIRA 15:2)

(Geography)   (Africa—Maps)

TANTSOVA, N.N. [translator]; IVANOV-KHOLODNYY, G.S., red.; SAMSONENKO,
    L.V., red.; KHOMYAKOV, A.D., tekhn. red.

    [Investigation of the upper atmosphere by the use of rockets and
    satellites; solar short-wave and corpuscular radiations and
    their effect on the upper atmosphere of the earth] Issledovaniia
    verkhnei atmosfery s pomoshch'iu raket i sputnikov; korotkovolno-
    voe i korpuskuliarnoe izlucheniia solntsa i ikh vozdeistvie na
    verkhniuiu atmosferu Zemli; sbornik statei. Moskva, Izd-vo inostr.
    lit-ry, 1961. 471 p.   (MIRA 15:2)
      (Solar radiation)   (Atmosphere, Upper--Rocket observations)

BOGOYAVLENSKIY, G.P.; TIKHOMIROV, V.N.; Prinimali uchastiye: SHISHKIN,
I.B.; MAL'CHEVSKIY, G.N.; GALITSKIY, V.A.; BELEN"KIY, A.B., kand.
ist. nauk, nauchnyy red.; GRIN, M.F., kand. ekon. nauk, nauchnyy
red.; ZABELIN, I.M., kand. geogr. nauk; SAMSONENKO, L.V., nauchnyy
red. FRADKIN, N.G., kand. geogr. nauk, nauchnyy red.; BELICHENKO,
R.K., mladshiy red.; VILENSKAYA, E.N., tekhn. red.

[The land and people; geographical calendar for 1963]Zemlia i liudi;
geograficheskii kalendar' 1963. Moskva, Geografgiz, 1962. 303 p.
(MIRA 16:2)

(Geography--Yearbooks)

NIKOL'SKIY, G.M., red.; SAMSONENKO, L.V., red.; BASSOLO, V.S., red.;
    DOTSENKO, V., tekhn. red.

    [Ultraviolet solar radiation and the interplanetary medium]
    Ul'trafioletovoe izluchenie solntsa i mezhplanetnaia sreda.
    Moskva, Izd-vo inostr. lit-ry, 1962. 431 p.   (MIRA 16:2)
    Translated from the English.
                         (Solar radiation)

SAVIN, B.I.[translator]; TIMOFEYEV, G.A.[translator]; SHABANSKIY,
        V.P., red.; SAMSONENKO, L.V., red.; DZHATIYEVA, F.Kh.,
        tekhn. red.

[Earth's radiation belts]Radiatsionnye poiasa Zemli. Mo-
skva. Izd-vo inostr. lit-ry, 1962. 208 p.   (MIRA 16:4)
Translated from the English
                (Van Allen radiation belts)

KRINOV, Yevgeniy Leonidovich: PROKHODTSEVA, S.Ya., red.; SAMSONENKO,
        L.V., red.; MATVEYEVA, G.Ye., mladshiy red.; ARDANOVA, N.P.,
        tekhn. red.

        [Herolds of the universe] Vestniki Vselennoi. Moskva, Geog-
        rafgiz, 1963. 141 p.   (MIRA 16:5)
                            (Meteorites)

BOGOYAVLENSKIY, G.P.; SHISHKIN, I.B.; Prinimal uchastiye GALITSKIY,
          V.A.; MAL'CHEVSKIY, G.N., red.-sostavitel' kart; BELEN'KIY,
          A.B., kand. ist. nauk, nauchn. red.; GRIN, M.F., kand. ekon.
          nauk, nauchn. red.; ZABELIN, I.M., kand.geogr. nauk, nauchn.
          red.; SAMSONENKO, L.V., nauchn. red.; FRADKIN, N.G., kand.
          geogr. nauk, nauchn. red.; BELICHENKO, R.K., mlad. red.;
          KIR'YANOVA, Z.V., mlad. red.; VILENSKAYA, E.N., tekhn. red.

          [Land and people; geographical calendar for 1964] Zemlia i
          liudi; geograficheskii kalendar' 1964. Moskva, Gos.izd-vo
          geogr. lit-ry, 1963. 302 p.   (MIRA 17:2)

BOGOYAVLENSKIY, G.P.; SHSHKIN, J.B.; GALITSKIY, V.A.; BELEN'KIY,
    A.B., kand.ist. nauk, nauchn. red.; GRIN, M.F., kand.
    ekon. nauk, nauchn. red.; ZABELIN, I.M., kand. geogr.
    nauk, nauchn. red.; LAPPO, G.M., kand. geogr. nauk,
    nauchn. red.; SAMSONENKO, L.V., red.; FRADKIN, N.G., kand.
    geogr. nauk, nauchn. red.; KIR'YANOVA, Z.V., mlad. red.

    [The land and the people; Geographical calendar for 1965]
    Zemlia i liudi; Geograficheskii kalendar' 1965. Moskva,
    Mysl', 1964. 303 p.   (MIRA 18:1)

L 15174-65   EWP(e)/EWT(m)/EWP(t)/EWP(b)   IJP(c)/AFWP(t)   JD/WH
ACCESSION NR: AP4044272   S/0192/64/005/004/0557/0561

AUTHORS: Sobolev, Ye.V.; Bokiy, G.B.; Dvoryankin, V.F.; Samsonenko,
    N.D.

TITLE: Correlation of the optical and of the EPR spectra of type I
    natural diamond

SOURCE: Zhurnal strukturnoy khimii, v. 5, no. 4, 1964, 557-561

TOPIC TAGS: diamond EPR spectra, diamond IR spectra, diamond
property, diamond, EPR spectra, IR spectra, natural diamond

ABSTRACT: In solving a problem on the nature of defects in crystals
of natural diamonds it was of interest to compare the results of
different methods of investigation of the same specimens. It is
believed that such an investigation on the broad scale will enable
a deeper understanding of the true nature of diamond structure,
which is of interest from both the theoretical as well as from the
applied standpoint. In this investigation a comparison was made of
IR and Uv absorption spectra as well as of EPR spectra of a series
of natural diamonds. In addition, a visual study was made of the
fluorescence of crystals. In all there were 100 specimens of
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L 15174-65
ACCESSION NR: AP4044272   3

Yakutsk diamonds from the collection of the Institute of Geology
and Geophysics of the Siberian Branch of the Academy of Sciences
of the USSR (IGIGSO AN SSSR). The IR spectra were obtained on a
double-beam spectrophotometer UR-10, Uv spectra were taken with
ISP-28 spectrophotometer and the fluorescence of specimens was
excited in the near UV. The EPR spectra were obtained in the three
centimeter band on the instrument RE-1301. All spectra were obtained
at room temperature. A linear dependence was found between the
intensity of bands due to nitrogen impurity both in IR spectra (400
and 1280 cm-1 bands) and in EPR spectra. It was also found that
there exists a relationship between the intensity of bands of IR
spectra in 1360 - 1380 cm-1 region and the complex system of bands
in the g 2 region of EPR spectra. Characteristic spectra were
discovered in lemon-yellow and in brown crystals. The IR spectrum of
such crystals also shows an individual band at 4100 cm-1, the inten-
sity of which changes with change of the depth of coloration of
crystals. "In conclusion the authors wish to thank Academician V. V.
Voyevodskiy for permission to work on the EPR instrument as well as
M. Ya. Scherbakova of the IGIGSO AN SSSR for her help in obtaining
EPR spectra." Orig. art. has: 2 figures.

Card 2/3

L 15174-65
ACCESSION NR: AP4044272   2

ASSOCIATION: Institut neorganicheskoy khimii SO AN SSSR (Institute
of Inorganic Chemistry of the Siberian Branch of the Academy of
Sciences of the SSSR) Institut radiotekhniki i elektroniki AN
SSSR Institut radiotekhniki i elektroniki AN SSSR (Institute of
Radio Engineering and Electronics of the Academy of Sciences of the
SSSR)

SUBMITTED: 07Mar64   ENCL: 00

SUB CODE: OP   NR REF SOV: 001   OTHER: 009

Card 3/3

L 11265-65   EWT(m)/EWP(e)   SSD/AFWL/ASD(a)-5/AFETR/AS(mp)-2/RAEM(1)/ESD(t)/
RAEM(c)/ESD(gs)   WH   S/0181/64/006/010/3086/3088

ACCESSION NR: AP4046624

AUTHOR: Samsonenko, N. D.   B

TITLE: On the distribution of nitrogen paramagnetic centers in
certain type-I diamonds

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3086-3088

TOPIC TAGS: electron paramagnetic resonance, diamond, donor center,
nitrogen, impurity concentration, dipole dipole interaction, line
broadening

ABSTRACT: A possible interpretation is proposed for some of the
singular EPR spectra which correlate with various optical features
of diamond crystals of type I, in which donor centers are produced
by nitrogen atoms replacing carbon atoms in the lattice. The form
of the spectrum indicates that the donor nitrogen is unevenly dis-
tributed in the crystal, reaching densities 10^{20} cm^{-3} and as low as

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ACCESSION NR: AP4046624

$\leq 3 \times 10^{19}$ cm^{-3}. The volume with the high concentration 10^{20} cm^{-3} amounts in some cases to ~2% of the total volume of the crystal. The presence of regions with increased and decreased donor concentrations is evidenced by the fact that the spectrum of the same sample can contain components with both narrow and broadened lines due to dipole-dipole interactions. Other evidence in favor of this interpretation is also presented. "In conclusion the author thanks V. F. Dvoryankin and Ye. V. Sobolev for continuous interest and V. V. Voyevodskiy and his co-workers for a useful discussion." Orig. art. has: 1 figure and 3 formulas.

ASSOCIATION: Institut neorganicheskoy khimii SO AN SSSR, Novosibirsk (Institute of Inorganic Chemistry SO AN SSSR)

SUBMITTED: 04May64   ENCL: 00

SUB CODE: SS, OP   NR REF SOV: 003   OTHER: 005

Card   2/2

L 63618-65   EPF(c)/EWT(1)/EWT(m)/EWP(b)/EWP(t)   Pi-4   IJP(c)   GW/WW/JD

ACCESSION NR: AP5016918   UR/0192/65/006/003/0460/0461

538.113

AUTHOR: Sobolev, Ye. V.; Bokiy, G. B.; Samsonenko, N. D.

TITLE: Some aspects of the ESR spectra of diamonds

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 3, 1965, 460-461

TOPIC TAGS: diamond, nitrogen impurity, electron spin resonance, ESR spectrum

ABSTRACT: An earlier study of the optical properties and ESR spectra of natural diamonds showed the existence of a correlation between the content of nitrogen present as an impurity and the concentration of paramagnetic nitrogen centers in the sample. In the present article, an attempt was made (using artificial diamonds) to check the hypothesis that this correlation is probabilistic in character, and that the ratio of $N_{paramagn}$ to N_{tot} may be related to the conditions of formation of the diamonds. ESR spectra of artificial diamonds in the form of a crystalline powder or polycrystalline aggregates showed that in the range of $g \approx 2$, a spectrum is observed which corresponds to the predicted spectrum for paramagnetic nitrogen in diamond powder. Measurement of the concentration of paramagnetic atoms gave values ranging from 10^{18} to 5×10^{19} spin/cm^3, i.e., values which are much closer to the total nitrogen content than in the colorless, transparent Yakutia diamonds up to 5×10^{15}

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